IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

LISTING OF CLAIMS

CLAIMS

What is claimed, is:

(1) (original) A sound source localization system comprising:

a sound reflecting element for generating a delay deformation corresponding to a relative position between a sound source and sound collecting means;

a storage part for storing the acoustic data collected via said sound reflecting element; and

a sound source localization part for acquiring a sound source position, employing the acoustic data on which said delay deformation is superposed.

(2) (original) The sound source localization system according to claim 1, wherein said sound reflecting element is formed as a spheroid associated with the relative position between the sound source and sound collecting means to generate said delay deformation intrinsic to said relative position.

(3) (original) The sound source localization system according to claim 1, wherein said sound source localization part comprises a standard template storage part for storing a standard template

containing an intrinsic delay deformation generated by a white noise sound source, a background noise template storage part for storing a background noise template, a residual generation part for calculating a residual from said acoustic data, employing said standard template and said background noise template, and a selection part for selecting the standard template giving the least residual, employing the generated residual.

(4) (original) The sound source localization system according to claim 3, wherein said standard template storage part stores the standard template and the sound source position giving said standard template in association.

(5) (original) The sound source localization system according to claim 1, wherein said sound source localization system comprises at least one sound reflecting element, and simultaneously acquires positional data of the sound source including a range to the sound source, an azimuth and an elevation as said relative position.

(6) (original) A sound source localization method for acquiring the position of a sound source under the control of an information processing apparatus, said method comprising:

a step of collecting the acoustic data with a delay deformation superposed corresponding to a relative position between a sound source and sound collecting means;

a step of storing said collected acoustic data in a storage part; and

a step of reading the acoustic data with said delay deformation superposed and acquiring said relative position of said sound source designated by said delay deformation.

(7) (original) The sound source localization method according to claim 6, wherein said delay deformation is generated by reflection from a spheroid associated with said relative position between the sound source and sound collecting means, and said delay deformation is generated intrinsic to said relative position.

(8) (original) The sound source localization method according to claim 6, wherein said sound source localization step comprises a step of reading out a standard template from a standard template storage part for storing the standard template containing a delay deformation intrinsic to said relative position generated by a white noise sound source, a step of reading out a background noise template from a background noise template storage part for storing the background noise template, a step of calculating a residual from said acoustic data, employing said standard template and said background noise template, and a step of selecting the standard template giving the least residual, employing the generated residual.

(9) (original) The sound source localization method according to claim 6, wherein said selection step comprises a step of referring to the selected standard template and acquiring the sound source position corresponding to said standard template.

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(10) (original) The sound source localization method according to claim 6, further comprising a step of simultaneously acquiring the range, azimuth and elevation as said relative position from said acquired sound source position to said sound source.

(11) (withdrawn) A sound reflecting element for generating a delay deformation corresponding to a relative position between a sound source and sound collecting means, wherein a reflecting surface of said sound reflecting element has an envelope made from a plurality of spheroids that are formed by rotating a plurality of ellipses having the distance between the focal points corresponding to the distance from said sound source to said sound collecting means around an axis connecting said focal points.

(12) (withdrawn) The sound reflecting element according to claim 11, wherein said plurality of ellipses are generated in relation with the elevation between said sound source and said sound collecting means and flatter as said elevation is greater.

(13) (withdrawn) The sound reflecting element according to claim 11, wherein said reflecting surface is formed as an enveloping surface of said plurality of spheroids that are generated by rotating a corresponding ellipse around the axis connecting said focal points.

(14) (withdrawn) A formation method of a sound reflecting element comprising:

generating a delay deformation corresponding to a relative position between a sound source and sound collecting means;

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a step of generating a plurality of spheroids by rotating an ellipse having the distance between the focal points corresponding to the distance from said sound source to said sound collecting means around an axis connecting said focal points; and

a step of forming a reflecting surface by generating an enveloping surface of said plurality of spheroids.

(15) (withdrawn) The formation method of the sound reflecting element according to claim 14, wherein said plurality of ellipses are generated in relation with the elevation between said sound source and said sound collecting means and flatter as said elevation is greater.